

Notice of Allowability

Application No.

10/668,441

Examiner

Phuong-Thao Cao

Applicant(s)

MIAO, BINGJIE

Art Unit

2164

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment After Final filed on 10/25/2006.
2. ☒ The allowed claim(s) is/are 1,2,4-15 and 17-19.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |



CHARLES RONES
SUPERVISORY PATENT EXAMINER

DETAILED ACTION

1. This action is in response to Amendment After Final filed on 10/25/2006.
2. Claims 3 and 16 were previously cancelled. Currently, claims 1-2, 4-15 and 17-19 are pending.

Response to Arguments

3. Applicant's amendment and arguments are effective to overcome all rejections in the previous office action filed on 9/1/2006.

Examiner's Amendment

4. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Attorney Rochelle Lieberman (Reg. No. 39,276) on 11/1/2006.

The application has been amended as follows:

Replace claims 1 and 13 with the following:

Claim 1 (Currently Amended): A method for optimizing a snow flake query comprising:

organizing a database stored on a computer readable medium with a fact table and multiple dimension tables into a snow flake **query** configuration;

reducing the snow flake configuration to a star configuration by combining a first generation child dimension table rooted at the fact table and all subsequent dimension tables rooted at said first generation child dimension table into a logical node;

determining commitment of said logical node for push down to a fact table for execution of a query;

pushing down said logical node to said fact table responsive to a positive commitment, wherein the step of pushing down said logical node to said fact table includes each dimension table rooted at said first generation child dimension table in said logical node; and

displaying query results to a user.

Claim 13 (Currently Amended): An article comprising:

a computer-readable medium;

means in the medium for storing data in a relational database having a fact table and at least two child dimension tables, wherein said tables are organized in a snow flake **query** configuration;

means in the medium for reducing the snow flake configuration to a star configuration by combining a first generation child dimension table rooted at the fact table and all subsequent dimension tables rooted at said first generation child dimension table into a logical node; **and**

means in the medium for determining commitment of said logical node for push down to said fact table for execution of a query; and

means for pushing down said logical node to said fact table responsive to a positive commitment, wherein said means for pushing down said logical node to said fact table includes each dimension table rooted at said first generation child dimension table in said logical node.

Reasons for Allowance

5. Claims 1-2, 4-15 and 17-19 are allowable.
6. The following is an examiner's statement of reasons for allowance:

The present invention is directed to a system and method for optimizing snowflake queries by creating a logical node wherein the logical node is comprised of a child dimension table rooted at a fact table and all dimension tables rooted at the child dimension table and determining if the logical node can be committed for push down to the fact table.

The closest prior art of record, Lindsay et al. (US Patent No. 6,105,020) having the same assignee as that of the application, teach a system for optimizing snowflake query by locating the fact table and snowflake roots (equivalent to Applicant's "first generation child dimension table"), breaking cycles between and within snowflakes (equivalent to Applicant's "logical node"), determining the minimal set of tables included in each snowflake plan and determining which snowflakes should appear in the ANDing plan.

However, Lindsay et al. fails to anticipate or render obvious the recited feature of “wherein the step of pushing down said logical node to said fact table includes each dimension table rooted at said first generation child dimension table in said logical node” as in independent claim 1, “wherein optimization module includes each dimension table rooted at said first generation child dimension table in said logical node” as in independent claim 7, and “wherein said means for pushing down said logical node to said fact table includes each dimension table rooted at said first generation child dimension table in said logical node” as in independent claim 13.

This feature together with the other limitations of the independent claims are novel and non-obvious over the prior art of record. The dependent claims 2, 4-6, 8-12, 14-15 and 17-19 being definite, enabled by the specification, and further limiting to the independent claim, are also allowable.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled “Comments on Statement of Reasons for Allowance.”

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuong-Thao Cao whose telephone number is (571) 272-2735. The examiner can normally be reached on 8:30 AM - 5:00 PM (Mon - Fri).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Rones can be reached on (571) 272-4085. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PTC

November 1, 2006


CHARLES RONES
SUPERVISORY PATENT EXAMINER


7 November 2006